REMARKS

By this reply, claims 70-89, 95, and 103-112 remain pending. In the outstanding Final Office Action (the Office Action), claims 103, 104, 106, and 107 were rejected under 35 U.S.C 103(a) as being unpatentable over U.S. Patent Number 6,019,165 issued to Batchelder ("Batchelder") in view of U.S. Patent Publication US 2003/0056939 A1 to Chu et al. ("Chu") and further in view of U.S. Patent Publication US 2006/0169440 to Chou et al. ("Chou") and U.S. Patent Publication US 2004/0141275 to Athari ("Athari"). Claims 70-84, 87, 105, and 108-112 were rejected under 35 U.S.C 103(a) as being unpatentable over Batchelder in view of Chu and further in view of Chou, Athari, and U.S. Patent Number 6,114,827 issued to Alvaro ("Alvaro"). Claims 85, 86, and 88 were rejected under 35 U.S.C 103(a) as being unpatentable over Batchelder, Chu, Chou, Athari, Alvaro and further in view of U.S. Patent Number 6,668,911 issued to Bingler ("Bingler").

Applicant disagrees with the propriety of these claim rejections for the same reasons explained in earlier responses to Office Actions and for the additional reasons explained below.

Rejection of claims 103, 104, 106, and 107

In the Office Action, claims 103, 104, 106, and 107 were rejected as being obvious over Batchelder, Chu, Chou, and Athari. Of these claims, claim 103 is independent and claims 104, 106, and 107 depend from independent claim 103. Independent claim 103 recites a cooling system for a computer system processing unit which includes, among others, a "pump including an AC motor ... [wherein] an AC

voltage to operate the motor [is] obtained by converting a DC voltage output of a DC power supply of the computer system to the AC voltage for the motor."

In the Office Action, the Examiner alleges that Athari discloses a DC power supply "to power an AC motor (para. 0013, last sentence), the AC voltage to operate the motor being obtained by converting a DC voltage (para. 0013, last sentence)." Office Action, pg. 4, last paragraph.

Athari discloses a switching mode power supply (SMPS) with an EMI filter at the output of the switching stage of the SMPS. Athari, para. 0007. Athari also discloses that "[t]he active EMI filter of the present invention can be placed on the output lines of an off line or a dc-dc power supply having either a DC or AC (Inverter) output to reduce output electromagnetic noise emissions without the power losses and large physical size of traditional passive filters." Athari, para. 0009. Athari, in paragraph 0013, further discloses that, "although a buck converter is shown and described, the power switching circuit could be any other type of SMPS or could be a converter, such as an inverter, e.g., an inverter driving an AC motor." Athari, para. 0013.

Switching mode power supplies are power supplies that provide the power supply function through components such as capacitors, inductors, and transformers and "are often classified in four categories [as] ac-ac converters (example: frequency changers, cycloconverters), ac-dc converters (example: rectifiers, off-line converters), *dc-ac converters (also called inverters), [and] dc-dc converters (also called converters).*" (emphasis added). See, "Switching-Mode Power Supply Design Tutorial," Chapter: Introduction to Power Supply Design, Jerrold Foutz, available at http://www.smpstech.com/tutorial/t00con.htm. Of these categories, a dc-dc converter is

referred to as a buck converter. See, id., Chapter: Simple Switching Power Supply Topologies; see also description at http://powerelectronics.com/power_systems/dc_dc_converters/power_buckconverter_design_demystified/). That is, Athari discloses that although the EMI filter of Athari is disclosed with reference to a dc-dc power supply (ie. a buck converter), the EMI filter will also be applicable for a dc-ac power supply (ie. an inverter). In Athari, if an inverter is used as the power supply, as stated in para. 0013, an AC voltage is produced as the output of the power supply. This AC voltage may be directly used to drive an AC motor. That is, Athari does not disclose an "AC motor ... [wherein] an AC voltage to operate the motor [is] obtained by converting a DC voltage output of a DC power supply of the computer system to the AC voltage for the motor."

Batchelder, Chu, and Chou do not remedy this deficiency. Therefore, independent claim 103 is allowable over the cited references at least for this reason. Claims 104, 106, and 107 depend from independent claim 103. Therefore, these claims are also allowable over the cited references at least for the same reason that independent claim 103 is allowable.

Rejection of claims 70-84, 87, 105, and 108-112

In the Office Action, claims 70-84, 87, 105, and 108-112 were rejected as being obvious over Batchelder, Chu, Chou, Athari, and Alvaro. Of these claims, claim 70 and 108 are independent. Claims 71-84, and 87 depend from independent claim 70, and claims 109-112 depend from independent claim 108. Claim 105 is dependent from independent claim 103.

Independent claim 70 recites a cooling system for a computer system with a pump including an AC motor, where "an AC voltage to operate the motor [is] obtained by converting a DC voltage output of a DC power supply of the computer system to the AC voltage." Independent claim 108 recites a method of operating a cooling system for a computer system having a pump with an AC motor where "an AC voltage to operate the motor [is] obtained by converting a DC voltage output of a DC power supply of the computer system to the AC voltage." The Examiner relies on Athari for this teaching. See, Office Action, page 7, last para. As discussed earlier with reference to the rejection of independent claim 103, Athari does not disclose a system with an AC motor wherein "an AC voltage to operate the motor [is] obtained by converting a DC voltage output of a DC power supply of the computer system to the AC voltage," as recited in independent claims 70 and 108. Batchelder, Chu, Chou, and Alvaro also do not remedy this deficiency. Therefore, independent claims 70 and 108 are allowable over the cited references for at least this reason.

Claims 71-84, and 87 depend from independent claim 70, and claims 109-112 depend from independent claim 108. These claims are allowable over the cited prior art at least for the same reason that their respective independent claims are allowable over the cited prior art.

Claim 105 depends from independent claim 103. As discussed earlier, independent claim 103 is allowable over the cited prior art since they do not disclose all the recited limitations of independent claim 103. Therefore, dependent claim 105 is patentable over the cited prior art at least for the same reason that independent claim 103 is patentable over these prior art references.

Rejection of claims 85, 86, and 88

In the Office Action, claims 85, 86, and 88 were rejected as being obvious over Batchelder, Chu, Chou, Athari, Alvaro, and Bingler. Claims 85, 86, and 88 depend from independent claim 70. As discussed with reference to the rejection of claim 70, Batchelder, Chu, Chou, and Athari do not disclose all the limitations of independent claim 70. Bingler does not remedy this deficiency. Therefore, claims 85, 86, and 88 are patentable over these references at least for the same reason that independent claim 70 is allowable over these references.

Prior art made of record by the Examiner

The Examiner cites U.S. Patent Number 4,777,578 issued to Jahns and U.S. Patent Number 4,520,298 issued to Abbondanti as being pertinent to the current disclosure since they teach "DC power supplies used to drive AC motors." Office Action, page 9. Although these references are not cited as a basis of any rejection in the current Office Action, Applicant discusses some of the deficiencies of Jahns and Abbondanti to preempt use of these references in a subsequent Office Action. Jahns and Abbondanti both disclose a pulse width modulated inverter for providing input current to an AC motor. Jahns, Abstract; col. 1, lns. 39-42; Abbondanti, col. 1, lns. 7-14. Neither Jahns nor Abbondanti disclose a computer cooling system (or a method of cooling a computer system) having a pump with an AC motor where "an AC voltage to operate the motor [is] obtained by converting a DC voltage output of a DC power supply of the computer system to the AC voltage for the motor," as recited in independent claims 70, 103, and 108.

CONCLUSIONS

In view of the foregoing remarks, Applicant submits that this claimed invention is patentable over the prior art references cited against this application. Applicant respectfully requests that this Request for Reconsideration be considered by the Examiner and that the Examiner allow the pending claims. If the Examiner would like to discuss this case, she is invited to contact the undersigned at (617) 452-1675.

Please grant any extensions of time required to enter this Request for Reconsideration and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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/Eric P. Raciti/

Dated: April 1, 2009 By:_____
Eric P. Raciti
Reg. No. 41,475